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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,147	07/08/2003	David W. Abraham	YOR920010260US2	8233

7590 11/30/2007  
Dr. Daniel P. Morris, Esq.  
IBM Corporation  
Intellectual Property Law Dept.  
P.O. Box 218  
Yorktown Heights, NY 10598

EXAMINER
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LE, THONG QUOC

ART UNIT	PAPER NUMBER
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2827

MAIL DATE	DELIVERY MODE
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11/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/615,147

Applicant(s)

ABRAHAM ET AL.

Examiner

Thong Q. Le

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-24, 26-33, 35-49 and 51-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-24, 26-33 and 35-40 is/are allowed.
- 6) ☒ Claim(s) 41-43, 45-49, 51-52, 54-60 is/are rejected.
- 7) ☒ Claim(s) 44 and 53 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Amendment filed on 10/09/2007 has been entered.
2. Claims 21-24, 26-33, 35-49, 51-60 are presented for examination.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 21-24, 26-33, 35-49, 51-60 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

4. Regarding claim 35, line 1, should be changed "claim 36" to --claim 30--.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 41-43, 45-48-49, 51-52, 54-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Ayata et al. (U.S. Patent No. 5006,864).

Regarding claim 48, Ayata et al. disclose an information storage device (ABSTRACT, An information read-out and recording apparatus, Figure 6A, Figure 35,) comprising:

an array of magnetic memory elements (Column 20, 17-20); and

a plurality of heating elements (Figure 28, 1H1-1H32, Column 17, lines 4-32) for said array of magnetic memory elements, said heating elements are included with said magnetic memory elements extending across the array (Figures 5, 6A, 28 Column 6, lines 41-68, Column 7, lines 1-37, M magnetic memory, H is heat element).

Regarding claims 49, 51, Ayata et al. disclose wherein the heating elements are conductors (Column 17, lines 27-32, the heat element H<sub>i</sub> is provided on insulating layer I<sub>1</sub> supported by 1C and the conductive layer constituting the electrode L).

Regarding claim 52, Ayata et al. disclose wherein the heating lines extend diagonally across the array (Figure 5, H1-H7, L1-L7).

Regarding claim 54, Ayata et al. disclose wherein the heating elements raise the temperature of selected memory elements (Column 5, lines 10-48, Figure 9).

Regarding claims 55-56, Ayata et al. disclose further comprising first means for generating magnetic fields for switching selected memory elements; and second means for causing the heating elements to apply heat to the selected memory elements while the magnetic fields are being applied (Column 15, lines 62-68, Column 16, lines 1-25).

Regarding claim 57, Ayata et al. disclose an information storage device (Figure 25) comprising:

- an array of magnetic memory elements (Column 20, lines 15-28); and
- means for performing thermally-assisted switching (Figure 25, MD) of selected memory elements in the array said means comprises heating elements included in the devices extending across the array (Column 16, lines 5-12).

Regarding claim 60, Ayata et al. disclose wherein the heating elements are spaced apart from the memory elements (Figure 25, 1H1, 2H32).

Regarding claims 41-43, 45-47, 58-59 the apparatus discussed above should performed the method of claims 41-43, 45-47, 48-49.

***Allowable Subject Matter***

7. Claims 21-24, 26-33, 35-40 are allowed.

8. Claims 44, 53 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Ayata et al. (U.S. Patent No. 5,006,864), and others, does not teach the claimed invention having a method for writing to a memory storage device comprising providing a storage cell comprising a changeable magnetic region, said changeable magnetic region comprising a material having a magnetization state that is responsive to a change in temperature thereof; and heating an element of said storage cell for selectively changing the temperature of said changeable magnetic region of said storage cell.

9. Claims 44, 53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 44, 53 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Ayata et al. (U.S. Patent No. 5,006,864), and others, does not teach

the claimed invention having wherein the heating elements raise the temperature of selected memory elements by about 5 C<sup>o</sup> to 10 C<sup>o</sup> above a compensation temperature.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Le whose telephone number is 571-272-1783. The examiner can normally be reached on 8:00am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarabian Amir can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thong Q. Le  
Primary Examiner  
Art Unit 2827

